

### **REMARKS**

Claims 1-18 are pending in the application. Claims 19-23 were cancelled in a previous amendment. No amendments were made to the claims and no new claims were added. Therefore, no new matter has been added.

For at least the reasons set forth below, withdrawal of the outstanding rejections is respectfully requested.

### **Applicant Requested Interview**

Applicants request an interview prior to formal action to this response. An "Applicant Initiated Interview Request Form" accompanies this response. Please contact Applicants' undersigned representative to schedule the interview.

### **Prior Art Rejections**

Claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0210074 A1 (Morgan *et al.*, hereinafter "Morgan") in view of U.S. Patent Application No. 2002/0171402 A1 (Beck).

Claims 4-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Morgan. Applicants respectfully traverse these rejections.

#### **1. Patentability of independent claim 1 over Morgan in view of Beck**

Claim 1 reads as follows (underlining added for emphasis):

A circuit for signal transmission, said circuit comprising: a current source; a current sink having a current control terminal; a current steering circuit having a pair of output nodes, said current steering circuit being arranged to receive current from the current source and to pass current to the current sink, and said current steering circuit being configured to provide a differential signal to a load connected across the output nodes; and a control circuit including a voltage regulator, said voltage regulator being configured to produce a regulated voltage based on a comparison between a reference voltage and an offset voltage, wherein the current control terminal of the current sink is arranged to receive the regulated voltage.

In the present application, the control circuit 110, 120 regulates output common-mode voltage by comparing a reference voltage  $V_{ref}$  with an offset voltage  $V_{off}$  or an observed common-mode voltage and biasing current sink transistors NC0 – NC4. Specifically, current control terminals of the current sinks NC0-NC4 receive a regulated voltage produced by the voltage regulator X1 of the control circuit 110, 120.  $V_{ref}$  can be generated from a node external to the current path of the driver circuit, for example from a reference circuit such as a bandgap reference generator.  $V_{off}$  is a voltage produced in a replicated circuit in the control circuit 110 that corresponds to the primary regulated voltage across R1. See Figures 9-11 and paragraphs [0034], [0035], [0043] and [0044] of the specification.

Beck discloses a voltage regulator with the capability to both sink and source current while maintaining a substantially predetermined voltage. See paragraph [0006] of Beck. However, Beck does not disclose or suggest that [the] voltage regulator [is] configured to produce a regulated voltage based on a comparison between a reference voltage and an offset voltage. Beck discloses a reference voltage BGVREG produced from a constant voltage generator. See Figure 1 and paragraph [0013] of Beck. Beck does not disclose or suggest an offset voltage as disclosed in the present application, Figures 9-11. Accordingly, there cannot be a comparison between a reference voltage and an offset voltage. Further, in the only embodiment disclosed in Beck, it is noted that the substantially predetermined voltage level maintained by the voltage regulator is determined substantially by the BGVREG. See paragraph [0014] of Beck. Consistent with the disclosure of the dominance of BGVREG in determining the output voltage of the regulator, Beck does not disclose or suggest a regulated voltage based on a comparison between a reference voltage and an offset voltage as disclosed in the present application, Figures 9-11.

Further, Beck does not disclose or suggest [that] the current control terminal of the current sink is arranged to receive the regulated voltage. First, as described above, Beck does not disclose or suggest the regulated voltage of the kind that is disclosed in the present application. Thus, the only regulated voltage disclosed or suggested in Beck is that voltage produced on the source/drain side of the voltage regulator output stage at terminals BIASM and BIASP. See Figure 1 and paragraph [0014] of Beck. Second, although Beck discloses a current

sink/source control switch that comprises transistors 330, 340 and also 350, none of these transistors receive the regulated voltage of the voltage regulator. In other words, the gates of transistors 330, 340 and 350, which function as the current control terminal of the current sink, are not arranged to receive the regulated voltage that is produced at terminals BIASM and BIASP. See Figure 1 and paragraphs [0014] and [0015] of Beck. The Examiner asserts that Figure 1 and paragraph [0012] of Beck discloses the current control terminal of the current sink is arranged to receive the regulated voltage. As discussed above, Applicants assert that Figure 1 does not disclose or suggest that the gates of transistors 330, 340 and 350 receive the regulated voltage. Further, Applicants find no disclosure or suggestion in paragraph [0012] that the gates of transistors 330, 340 and 350 receive the regulated voltage. In addition, Applicants find no disclosure regarding the current control terminals of the current sink at all in the reference (now U.S. Patent No. 6,611,552 (Beck)) cited in paragraph [0012] of Beck that elaborates on regulator 275.

Accordingly, claim 1 is believed to be patentable over Morgan in view of Beck and Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 1.

## 2. Patentability of the dependent claims over the cited references

The dependent claims are believed to be patentable over the cited references for at least the reason that they are dependent upon an allowable base claim and because they recite additional patentable limitations.

### **Allowable Subject Matter**

The Applicants thank the Examiner for again indicating that claims 10-18 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As discussed above, the Applicants respectfully submit that independent claim 1 is patentable over the applied prior art. Therefore, as claims 2-18 depend from claim 1, the Applicants further submit that claims 1-18 are in condition for allowance.

**Conclusion**

Insofar as the Examiner's rejections were fully addressed, the instant application is in condition for allowance. Issuance of a Notice of Allowability of all pending claims is therefore earnestly solicited.

Respectfully submitted,

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